IN THE CLAIMS

1 - 14. (canceled)

15. (original) A method for processing radar return data in order to reject returns from a negative doppler shift swath to mitigate corruption of returns from a positive doppler shift swath, the radar receiving returns at each of a right channel, a left channel, and an ambiguous channel, said method comprising:

sampling the radar data from each of the channels;

filtering the samples;

converting the filtered samples to doppler frequency signals;

filtering the doppler frequency signals with a band pass filter, the filter centered at the doppler frequency; and

determining phase relationships between the right, left , and ambiguous channels using the filtered doppler frequency signals.

16. (original) A method according to Claim 15 wherein converting the filtered samples to a doppler frequency comprises converting the filtered samples into in-phase and quadrature components of the returned swaths.

17. (original) A method according to Claim 16 wherein converting the filtered samples into in-phase and quadrature components comprises applying a sample delay to phase shift an in-phase component by 90 degrees.

18. (original) A method according to Claim 16 wherein converting the filtered samples to a doppler frequency comprises filtering the in-phase and quadrature components using four cascaded second order infinite impulse response filters.

19. (original) A method according to Claim 18 further comprising subtracting the quadrature components from the in-phase components.

20. (original) A method according to Claim 15 wherein sampling the radar data from each of the channels comprises sampling the components at a multiple of four of the frequency of the input signal.

21. (currently amended) A radar signal processing circuit comprising:

a radar gate correlator configured to sample radar data at a sampling rate;

a correlation bass pass filter filtering the sampled radar data and configured to stretch the sampled radar data to a continuous wave (CW) signal;

a mixer configured to generate a quadrature component of the CW signal using a sample delay element and further configured to down sample an in-phase component and the quadrature component of the CW signal to a doppler frequency; and

a band pass filter centered on the doppler frequency.

22. (currently amended) A radar signal processing circuit according to Claim 21 wherein said mixer comprises at least one all pass filter, said all pass filter comprising four cascaded second order infinite impulse response filters.